

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

5 **Listing of Claims:**

Claim 1 (currently amended): A method for real-time instruction information tracing, when a microprocessor runs a program comprising a plurality of specific instructions, the method records instruction information of the specific instructions executed by the microprocessor from a tracing start point, the method comprising:

10 setting a trace count value as ~~[[a]]~~ an initial value;
setting a trigger count value according to the tracing start point;
starting to run the program with the microprocessor;
when a specific instruction is executed by the microprocessor, increasing the

15 trace count value;
if the increased trace count value is equal to or larger than the trigger count value, recording the instruction information of the specific instruction executed by the microprocessor in a buffer;
when the buffer is full, stopping running the program with the microprocessor

20 and outputting instruction information recorded in the buffer via an output interface;
resetting the trigger count value according to the trace count value while the buffer is full, resetting the tracing value with the initial value, using the microprocessor to start to run the program; and when the microprocessor

25 finishes running the program, outputting instruction information recorded in the buffer via the output interface.

Claim 2 (currently amended): The method of claim 1, wherein the method further comprises:

setting a stop count value according to a tracing stop point; and
when the trace count value is equal to or larger than the stop count value,
stopping running the program with the microprocessor and outputting
instruction information recorded in the buffer via the output interface[[]] .

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Claim 3 (original): The method of claim 2, wherein the method further comprises
providing a stop count register for storing the stop count value.

10 Claim 4 (original): The method of claim 2, wherein the method further comprises
providing a comparator for comparing the trace count value with the stop count
value.

Claim 5 (original): The method of claim 1, wherein the method further comprises
providing a trace count register for storing the trace count value.

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Claim 6 (original): The method of claim 1, wherein the method further comprises
providing a trigger count register for storing the trigger count value.

20 Claim 7 (original): The method of claim 1, wherein the method further comprises
providing a comparator for comparing the trace count value with the trigger
count value.

25 Claim 8 (original): The method of claim 1, wherein the method further comprises
providing a filter for filtering instruction information of the specific instructions
executed by the microprocessor when the microprocessor is running the program.

Claim 9 (original): The method of claim 1, wherein the method further comprises
providing a storage device electrically connected to the output interface for
reading out and recording instruction information recorded in the buffer.

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